

MSDT - A Central Executive to Coordinate Rapid Mission and Spacecraft Design, Phase I

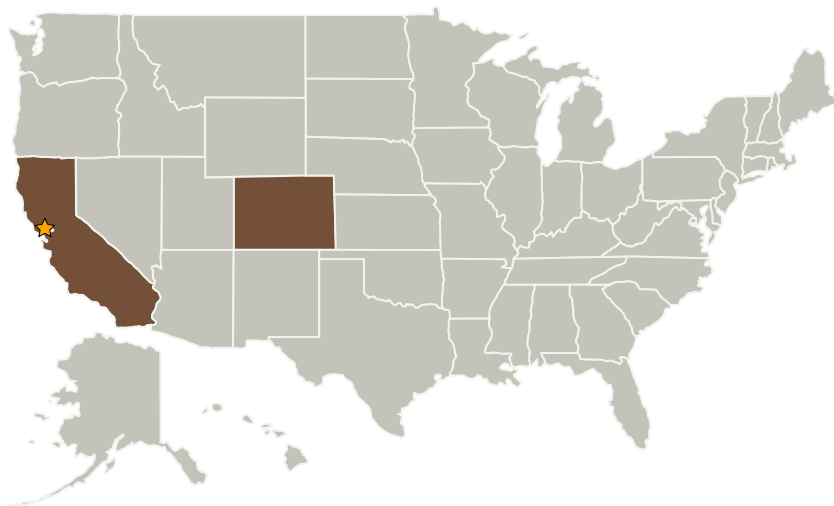
Completed Technology Project (2009 - 2009)



Project Introduction

The integrated design centers currently in place at the Goddard and Ames research institutions are highly productive infrastructures, allowing a group of domain specialists to rally for intense, focused intervals of time around a mission concept, refining a design in spiral fashion using a palette of trusted in-house and commercial engineering analysis tools. This approach can be significantly streamlined if a standard data exchange mechanism is established between the elements of the toolchain and a centralized function is included to govern the initiation and management of design projects. DNet has developed the Mission and Satellite Design Tool (MSDT) for AFRL, which is the starting point for the creation of tactical satellites. MSDT will accept objectives for a mission and distill them to a spacecraft configuration, drawing from a database of support devices and modular software. MSDT also coordinates the assessment of that satellite configuration, interacting with traditional analysis tools to perform domain analysis and return measures of performance which can be compared to the original objectives. DNet proposes to enhance the current framework capability to be compatible with NASA's preferred analysis tools and provide a springboard for the development of the SBIRSat and subsequent missions based on its supporting technologies.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Design_Net Engineering LLC	Supporting Organization	Industry	Golden, Colorado

Primary U.S. Work Locations

California	Colorado
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.5 Mission Architecture, Systems Analysis and Concept Development
 - └ TX11.5.2 Tools and Methodologies for Performing Systems Analysis